

Claim Recited under 1.126

202720 "GATEWAY"

What is claimed is:

1. A current collector, which comprises:

a) a frame comprising at least one frame conductor providing a closed perimeter;

5 b) a plurality of first radiating conductors radiating from a focal point on the frame and terminating at the frame perimeter spaced from the focal point;

10 c) at least one first concentric conductor extending from and meeting with spaced apart first and second frame portions of the frame perimeter and intersecting the plurality of radiating conductors, wherein the first concentric conductor is concentric with the focal point; and

15 d) at least one second concentric conductor extending from and meeting with spaced apart third and fourth frame portions of the frame perimeter and intersecting the plurality of radiating conductors, wherein the second concentric conductor is concentric with the focal point and spaced a substantial distance 20 from the first concentric conductor.

25 2. The current collector of claim 1 wherein from the focal point to the first concentric conductor is  $x$  and the substantial distance from the second concentric conductor to the first concentric conductor is from about  $1x$  to about  $10x$ .

3. The current collector of claim 1 wherein there are a plurality of first concentric conductors.

What is claimed is:

1. A current collector, which comprises:

a) a frame comprising at least one frame conductor providing a closed perimeter;

5 b) a plurality of first radiating conductors radiating from a focal point on the frame and terminating at the frame perimeter spaced from the focal point;

10 c) at least one first concentric conductor extending from and meeting with spaced apart first and second frame portions of the frame perimeter and intersecting the plurality of radiating conductors, wherein the first concentric conductor is concentric with the focal point; and

15 d) at least one second concentric conductor extending from and meeting with spaced apart third and fourth frame portions of the frame perimeter and intersecting the plurality of radiating conductors, wherein the second concentric conductor is concentric with the focal point and spaced a substantial distance from the first concentric conductor.

20 25 2. The current collector of claim 1 wherein from the focal point to the first concentric conductor is  $x$  and the substantial distance from the second concentric conductor to the first concentric conductor is from about  $1x$  to about  $10x$ .

3. The current collector of claim 1 wherein there are a plurality of first concentric conductors.

4. The current collector of claim 1 wherein there are a plurality of second concentric conductors.

5. The current collector of claim 1 wherein there are a plurality of second radiating conductors radiating from the at least one first concentric conductor to the at least second concentric conductor and focused at the focal point, and wherein the second radiating conductors do not radiate from the focal point.

10 6. The current collector of claim 1 wherein the focal point resides on a collector tab extending outwardly from the frame.

15 7. The current collector of claim 1 wherein the frame has a generally rectangular shape comprised of spaced apart first and second frame conductors extending to and meeting with third and fourth frame conductors, and wherein the first and second frame conductors are longer than the third and fourth frame conductors.

20 8. The current collector of claim 7 wherein the focal point resides on a collector tab extending from the junction of one of the first and second frame conductors meeting one of the third and fourth frame conductors.

25 9. The current collector of claim 1 of a conductive material selected from the group consisting of nickel, copper, titanium, cobalt, tantalum, aluminum and stainless steel, and alloys thereof.

10. A current collector, which comprises:

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a) a frame comprising at least one frame conductor providing a closed perimeter;

b) a plurality of first radiating conductors radiating from a focal point on the frame and terminating at the frame perimeter spaced from the focal point;

c) at least one first concentric conductor intersecting the plurality of radiating conductors, wherein the first concentric conductor is concentric with the focal point; and

d) at least one second concentric conductor intersecting the plurality of radiating conductors, wherein the second concentric conductor is concentric with the focal point and spaced a substantial distance from the first concentric conductor.

11. The current collector of claim 10 wherein from the focal point to the first concentric conductor is  $x$  and the substantial distance from the second concentric conductor to the first concentric conductor is from about  $1x$  to about  $10x$ .

12. The current collector of claim 10 wherein the first concentric conductor extends from and meets with at least one spaced apart first and second frame portions of the frame.

25 13. The current collector of claim 10 wherein the second concentric conductor extends from and meets with at least one spaced apart third and fourth frame portions of the frame.

15. The current collector of claim 10 wherein there are a plurality of first concentric conductors.

16. The current collector of claim 10 wherein there are a plurality of second concentric conductors.

17. The current collector of claim 10 wherein there are a plurality of second radiating conductors radiating from the at least one first concentric conductor to the at least second concentric conductor and focused at the focal point, and wherein the second radiating conductors do not radiate from the focal point.

18. The current collector of claim 10 wherein the focal point resides on a collector tab extending outwardly from the frame.

19. A method for providing an electrochemical cell, comprising the steps of:

a) providing a first current collector comprising: a frame comprising at least one frame conductor providing a closed perimeter; a plurality of first radiating conductors radiating from a focal point on the frame and terminating at the frame perimeter spaced from the focal point; at least one first concentric conductor extending from and meeting with spaced apart first and second frame portions of the frame perimeter and intersecting the plurality of radiating conductors, wherein the first concentric conductor is concentric with the focal point; and at least one second concentric conductor extending from and meeting with spaced apart third and fourth frame

portions of the frame perimeter and intersecting the plurality of radiating conductors, wherein the second concentric conductor is concentric with the focal point and spaced a substantial distance from the first concentric conductor;

b) contacting a first electrode active material to at least one of a first and second major sides of the first current collector connected to a first terminal to provide a first electrode;

c) electrically associating the first electrode with a second counter electrode connected to a second terminal and housed inside of a casing; and

d) activating the first and second electrodes with an electrolyte.

19 20. The method of claim 19 including providing the second electrode comprised of a second electrode active material contacted to a second current collector comprised of two of the first current collectors in a side-by-side, double wing configuration with an intermediate tab and having the second electrode active material contacted to at least one major side of each of the wings of the second current collector, and wherein the first electrode is provided intermediate the wings of the second electrode and folding the wings towards the first electrode to electrically associate the first electrode with the second electrode separated from each other by a separator.

20 21. The method of claim 19 including providing from the focal point to the first concentric conductor

being a distance of  $x$  and the substantial distance from the second concentric conductor to the first concentric conductor being from about  $1x$  to about  $10x$ .

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